Faculty of Science

BIOR20, Biology: Sensory Biology, 15 credits

Biologi: Sinnesbiologi, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2007-03-01 (2007188) and was last revised on 2025-05-30 by The Education Board of Faculty of Science. The revised syllabus comes into effect 2025-05-30 and is valid from the spring semester 2026.

General information

The course is elective for a Degree of Bachelor of Science or Degree of Master of Science (120 credits) in biology.

Language of instruction: English

Main field of study	*Specialisation*
Molecular Biology	A1N, Second cycle, has only first-cycle course/s as entry requirements
Biology	A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

The general aim of the course is that student should understand and can account for the senses and sensory organs of animals, as well as make comparisons between different animal groups.

Knowledge and understanding

On completion of the course the student shall be able to:

- account for the molecular basis for the function of sensory cells
- account for the function of sensory organs and how information is processed in the nervous system, including all different senses and different animal groups

- explain the importance of senses for animal behaviour, communication and navigation
- describe experimental methods for studies of animals'senses and perception

Competence and skills

On completion of the course the student shall be able to:

- apply experimental methods for studies of animals'senses and perception

Judgement and approach

On completion of the course the student shall be able to:

- assess and develop his/her own knowledge in relation to what is required for continued studies and work in neurobiology, zoology and ecology as well as in medical subject areas such as cognitive science or robotics

Course content

The course treats vision and other forms of light reception, smell, taste, hearing, balance, mechanoreception, electroreception, magnetoreception as well as senses for temperature and infrared radiation. All senses are studied are compared over the animal kingdom. During the course, methods of physiological, ethological and human psychofysiological nature are described and used.

The course consists of a series of sections which from both a theoretical and practical perspective treat different organizational levels, including cell- and molecular biology of the sensory cells, function of sensory organs, nervous system structure and its processing and integration of sensory information, and how sensory biology affect animal adaptation, behaviour and interactions with the environment (sensory ecology).

The course also includes individual and group projects, during which the ability to search information, solve problems, apply gained knowledge and make written and oral presentations is strengthened.

Course design

Teaching consists of lectures, seminars, demonstrations, laboratory sessions and project work. Active participation in laboratory sessions, seminars, project work and associated components are compulsory.

Assessment

The examination takes place through four written examinations during the course as well as through approved participation in labs, seminars and projects during the course. For students who have not passed the regular examination, an additional examination in close connection to this is offered.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Grades

Grading scale includes the grades: Fail, Pass, Pass with distinction
To pass the entire course, approved written examinations as well as approved laboratory work, seminars and projects are required.

The grading scale for laboratory work, seminars and projects is Fail, Pass, whereas the grading scale for theory (written exams) is Fail, Pass, Pass with distinction.

The final grade is decided through a joining of results on the written examinations.

Entry requirements

For admission to course is required 90 credits scientific studies, including knowledge equivalent to BIOA10 Cell and Microbiology 15 credits, BIOA11 Genetics and Evolution 15 credits, BIOB13/BIOC11 Human and Animal Physiology 15 credits or BIOB10 Zoology and Botany 15 credits, and chemistry 15 credits. English 6/English B.

Further information

The course is offered at the department of Biology, Lund University.